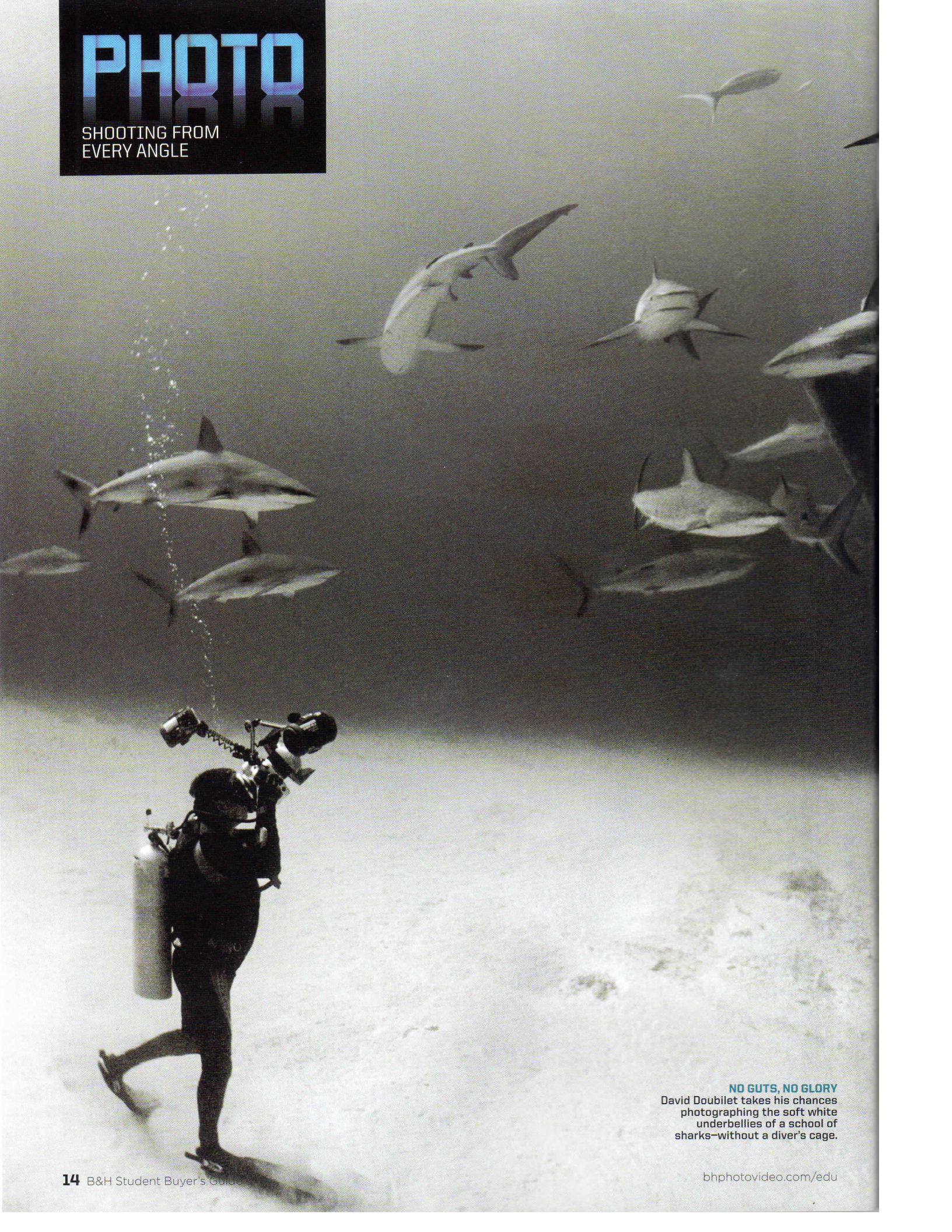


# PHOTO

SHOOTING FROM  
EVERY ANGLE



## NO GUTS, NO GLORY

David Doubilet takes his chances photographing the soft white underbellies of a school of sharks—without a diver's cage.



# DOWN UNDER

FROLICKING WITH STINGRAYS, SLEUTHING  
AROUND OLD SHIPWRECKS OR JUST SWIMMING  
WITH SHARKS, IT'S ALL IN A DAY'S WORK  
FOR AN UNDERWATER PHOTOGRAPHER

BY ERIC BUTTERFIELD

#### CHUMMING AROUND

It took Frink days of baiting this great white shark before it showed up and showed off its teeth and tonsils.



LOOKING STRAIGHT INTO THE FLAT EYES OF A FEROCIOUS GREAT WHITE SHARK. STARING DOWN the gaping maws of giant manta rays. Swimming above a beautifully ornate coral reef with playful dolphins. Or being enveloped by a swarming school of fish. That's just part of a day's work in what underwater photographer Larry Gates calls "the best office in the world." An assignment might be to capture strange and unique marine life in action in a remote corner of the globe. The waters of

these exotic locales are filled with everything from large, impressive animals like eagle rays to tiny and ornate coral-banded shrimp to breathtaking sunken ships. "In the way of scenery and inhabitants," says Gates, "it's a workplace that is full of constant surprises."

What makes underwater photography so different than "topside" photography is its immersive quality. "Shooting underwater, very simply, is probably one of the most exciting types of photography," says photographer David Doubilet. "You're not just recording a scene... you're involved in everything you're shooting."

Take, for example, photographer Wayne Levin. On a typical dive off the south coast of Kona, Hawaii, at Keauhou Bay, he photographs akule, which swim in large schools that can measure as much as

100 feet in diameter. Of course, one fish's gathering spot is another's meal ticket. "Sometimes there'd be 10 to 20 amber jacks," says Levin, referring to a 2½ foot-long fish with a taste for akule. Levin would

***"Finally seeing that great white shark come close enough to a get picture—that was really very special. There aren't too many memories in the ocean that eclipse that."*** — STEPHEN FRINK

follow the predators into the school. "It would open up like a tunnel—it was really awesome," he says. That's where Levin got the most exciting vantage point. "You look 360 degrees around you and you're surrounded by this fish school. They'd be about five to 10 feet away from you on any side, like an open circle with the fish school all the way around you, and overhead."

Sometimes you can be swallowed up by marine life. Other times the thrill is taking a close-up while avoiding the teeth of a great white. But getting the iconic predator of the deep to make an appearance isn't always easy. One of photographer Stephen Frink's expeditions off the coast of Australia almost ended without a sighting.

"It took several days of chumming to get a great white shark to come in," says Frink,

who admitted that it was frustrating, but worth the wait in the end. “Finally seeing that great white shark come close enough to a get picture—that was really very special. There aren’t too many memories in the ocean that eclipse that.”

### COZY UP

There’s so much beauty in the ocean, for a photographer it can be too much of a good thing. “You’ll see things that are really extraordinarily amazing,” says Doubilet. “And that can be anything from a sea lion hunting fish, a school of barracudas circling, seals playing in the shallow water, or a coral reef that’s so unbelievably beautiful that you don’t know where to point your camera.”

Creating an engaging photograph of this visual chaos is a challenge. First, you have to understand the difficulties that water itself poses. Because water filters light and color, capturing the bright colors of marine life requires a flash. Underwater, subjects need to be photographed at much closer range than on land. The cliché rings true, says Frink: “When you think you’re close enough, get closer.” And because water magnifies light, you need a wider lens than you need above water, which is why the wide-angle lens is the bread and butter of underwater photographers.

### START SIMPLE, GET COMFORTABLE

Before you get trigger-happy, get comfortable in the water. Being underwater has to be second nature before you can focus adequately on taking pictures. “I’m very serious about looking around before you ever even pick up a camera,” says Doubilet. And when it’s time to start, he recommends that beginners use a basic system.

If only to find out whether or not you’re a natural aquanaut, choose to start out with a point-and-shoot camera. When you get serious, take an SLR into the deep. As you progress, employ more sophisticated lighting. Doubilet works with as many as four flash units connected to his camera by arms that measure 18 to 24 inches—and sometimes adds two more flashes that are held by assistants. But he says that students should keep it simple in the beginning and use a single flash.

### BE A GOOD GUEST

Wild animals, of course, are not hired hands. Many of them are easily startled

## DIVE SHOP

# THE FISH FINDERS



### HOUSINGS

DSLR housings allow you the most control over your camera, as well as a variety of “ports” (seated over the lens) through which you shoot. Housing ports must be purchased separately and matched to your lens. Since you often need to be one foot or less from your subject, make sure the port is a perfect match for your wide-angle and macro lenses. Many point-and-shoot cameras in after-market housings give you decent results with available light, but add an external flash for improved color. Some DSLR’s also feature underwater modes, macro modes, and video settings, which allow you to capture as much video as the memory card will hold. A good setup is the PT-045 underwater housing for the Olympus Stylus Tough-8000 (pictured).

SKU# OLST8000BK1; \$362.95 (camera)  
SKU# OLPT045; \$239.95 (housing)



### LIQUID IMAGE MASK

The Liquid Image Digital Underwater Mask can add a level of fun when you’re splashing around offshore. It’s rated to a depth of 16 feet. With no built-in flash or flash attachment, greater depths would inhibit natural-light photos. The Liquid Image camera can take still images as well as 18-25 fps video at 640x480 pixels. It contains 16MB of built-in memory and accepts Micro SD cards.

SKU# LIUWCM5; \$99.95 (5 megapixel)



### UNDERWATER FLASH

Daylight is highly filtered by water, and color changes the deeper you dive. If you want to capture more natural color, a flash is essential. Use one that gives you a wide angle of illumination, because under the surface, beam angle is more important than power since you and your subject are up close and personal. It does help to have a flash that offers a versatile power dial. The Ikelite Substrobe DS-160 (pictured) does the job well.

SKU# IK3944.92; \$1,044.95

### SEA & SEA DX-26

The 12-Megapixel Sea & Sea DX-26 offers as close to SLR controls as you can get—and in a similar package. This kit sports full control over functions such as f-stop and shutter speed. A wet bayonet-mounted, wide-angle conversion lens attaches directly to the housing, and there’s a system flash, too. You can capture images in RAW format and also enjoy a white-balance mode for shooting in available light.

SKU# SEDX2612MPH; \$1,000.00

JUST FOR KICKS



and will flee, particularly those that rely on speed for their survival. Underwater photographers need to be as invisible and non-threatening as possible. Wayne Levin will attest to this; he lost an opportunity to photograph hammerhead sharks when another diver darted out from a nearby reef. The sharks were gone in the blink of an eye.

“Even the best diver is very clumsy in the water and makes a lot of noise,” says Stephen Frink. “I have spent a lot of time in classes talking about the field of flight, which is this hypothetical place whereby, if you get too close, the fish are going to leave.” Anticipate where you’re going to be, and see the photo before you take it. Before you approach, set your aperture, flash power, and ISO so you’re not fumbling with your equipment.

Some marine life is difficult to see because being still is a matter of life and death. “If fish depend on camouflage, they’re reluctant to move because that breaks their cover,” says Frink. Learning to identify these creatures means the difference between capturing or losing a startling image.

## NO TURNING BACK

Obviously, water and electronics don’t mix, so don’t be in a hurry when setting up your gear. “If you rush, the camera will leak and that’s the biggest problem—water coming in and ruining cameras,” says Doubilet. “You have to take it slow, carefully, methodically, double-checking everything.” Doubilet points out one common error made by newcomers: not cleaning the O-rings on an underwater housing thoroughly, which may cause subsequent leakage.

Once you’re underwater, there is no going back. You can’t change batteries, memory cards, or lenses. The pros tell cautionary tales of not having batteries in a camera or flash, of looking through the viewfinder and seeing nothing but black, only to find the lens cap still on a camera that’s snug in an underwater housing.

“I had the perfect opportunity to photograph a lionfish,” says Gates, laughing at

the thought. “I fired away... to my heart’s content, only to find out later I had no film in my camera. Ever since that episode, I try to double-check everything and function-check all my photo equipment before the boat leaves the dock.”

Before you dive, listen closely to the dive master and the guide—their instructions will clue you in to the kind of marine life you are likely to encounter. This will influence where you focus your efforts, and possibly what lens and lighting you pick. A wrong choice or slipup can be costly. As the saying goes, time is money. “You’re traveling across the world sometimes,” says Doubilet. “You then take a boat to your dive site, sometimes for a couple days. Every moment on the boat and every moment underwater is worth an absolute fortune, so you have to be completely prepared for every dive.”

## DON'T GET BENT

It’s crucial to become an experienced scuba diver before you take your camera into the deep—to ensure that you are comfortable enough to function well in a strange environment, and, more important, for your personal safety. You need to constantly monitor your time, depth, and air consumption underwater.

You also need to be very aware of currents, which Levin rates as the number one safety risk. Where he dives off the shores of Keauhou Bay, boat traffic is also a hazard, so it’s advisable to make yourself visible with diving flags. And you should carry safety gear such as inflatable safety tubes.

Being overly zealous to get a shot can be a liability as well. “When your computer tells you to come up, do it—don’t be like me. I was always so greedy about getting pictures that I ended up getting ‘bent’ a few times,” says Frink. “Next thing you know, you leave the [diving] trip early and go to a recompression chamber.” You want to avoid getting stricken with the bends, a decompression sickness that occurs when a diver breathes nitrogen or



**BELLY UP TO THE BAR**  
Stephen Frink drinks in the locals, hovering gracefully above the “Stingray City” sandbar, at Grand Cayman Island.

other gases (from the pressurized, compressed-air SCUBA tanks) that are not metabolized by the body. In order to release these gases harmlessly, a diver must rise to the surface slowly enough for them to seep normally from the body, making “decompression stops” along the way. If the diver rises too quickly, the gases

## THE PLAYERS



**DAVID DOUBILET** is a contributing photographer-in-residence for *National Geographic*. His most recent book is *Fish Face*. He says, “trying to take pictures in a group is like trying to take photographs from a bus. Take your own picture and don’t compete with everybody else.” [daviddoubilet.com](http://daviddoubilet.com)



**STEPHEN FRINK** is drawn to sharks. They also seem to be drawn to him. He is the author of the book, *Wonders of the Reef*. Formerly, he was director of photography at *Scuba Diving* magazine. His Web site offers a wealth of underwater photography tips. [stephenfrink.com/uw-photo-tutorials.php](http://stephenfrink.com/uw-photo-tutorials.php)



can't be released naturally and form bubbles in the bloodstream, causing an array of symptoms from pain in the limbs to headache to even death. If a diver succumbs to an attack of the bends, time in a recompression chamber is the usual form of treatment. And that's no place to get a close-up of a manta ray.

### GEARING UP TO GO DOWN

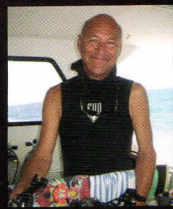
Now that you're ready to brave the deep, you need to choose your equipment. There is a multitude of after-market housings available for almost every SLR camera out there. There are housings to accommodate everything from an entry-level DSLR to the most top-of-the-line DSLR, such as the Sea & Sea

MDX-3 housing for the Nikon D3, which retails for \$3,999, and scores of choices in between that are more moderately priced. You can find dedicated underwater camera/housing systems, such as the 8-megapixel SeaLife DC800 (\$400), and the 12-megapixel Sea & Sea DX-2G UW (\$1000).

If you don't want to immediately spend



**WAYNE LEVIN** specializes in black-and-white underwater photography, shooting film the old-fashioned way with a Nikonos V. His work has appeared in more than 25 solo exhibitions. A book of his fish-school photographs titled *Akule* will be released in late 2009. [waynelevinimages.com](http://waynelevinimages.com)



**LARRY GATES** teaches classes in scuba diving and underwater photography in Key Largo, Florida, in a small, private setting, during which he keeps his cell phone turned off. He does about as many scuba dives as there are days in a year, and confesses to having a bad sense of humor. [larrygates.com](http://larrygates.com)

**THAT SHE BLOWS**

Frink captured this image of a whaleshark and a lone snorkeler gliding through the warm waters near Richelieu Rock, off the coast of Thailand.



a huge amount on an after-market housing or make your first dives with your treasured DSLR in an inexpensive, clumsier plastic dive bag, you can get your feet wet diving with a point-and-shoot camera. Canon makes underwater housings for many of its point-and-shoot cameras; most of these simple enclosures cost \$160 to \$200. A slightly more sophisticated housing is the Ikelite 6140.05 TTL for the Canon PowerShot S5 IS, which costs \$710. As the name suggests, this housing offers connections to use the camera's through-the-lens flash exposure, and has two arms for attaching external flash—two features that the simple Canon housings don't offer.

If you're using a point-and-shoot camera, outfit it with an auxiliary wide-angle conversion lens, which usually can be at-

*"I had the perfect opportunity to photograph a lionfish. I fired away to my heart's content, only to find out later I had no film in my camera."*

— LARRY GATES

tached to the outside of the underwater housing. This will allow you to get closer to your subject, which will increase contrast and improve the color in your photos. "If you want to really see what you're shooting—and if you want to know the feeling of the water—you have to get a supplemental wide-angle lens," says Doubilet. "As wide as you can possibly get."

### DIVING WITH A DSLR

When you're beyond the beginner stage, however, it's time to utilize a DSLR, which Frink requires his students to bring to class. "I just don't think I can get people up to speed quickly enough or make them advance far enough with a point-and-shoot system," he says. That doesn't mean you have to break the bank, however. "I shoot with an EOS DS Mark III, which is an \$8,000 camera, but there are so many good DSLRs for less money," says Frink, citing the less expensive Canon EOS 5D Mark II and the Nikon D300.

When choosing a waterproof housing for your DSLR, hold it in your hands. You want to ensure that the buttons fall conveniently under your thumbs and fingers, considering that it's a serious investment

which could cost as much—or more—than your camera body. For example, the Sea & Sea RDX-450D housing for the Canon EOS Rebel XSi, costs \$1,400.

### A LENS IN EVERY PORT

The port is the interchangeable part of the housing that fits around the lens. It is crucial that you match the port to your lens. There are two basic types of ports: flat and dome. Flat ports work with most typical lenses, but underwater photography is not typical. It needs a macro lens and a wide-angle lens, both of which will likely require a specific port.

Using a flat port with a wide-angle lens will narrow your view, and you may end up with vignettes—capturing the port at the edges of your photo. A dome port will eliminate these problems. To do so, it creates a virtual image on the dome, thus correcting image distortion. That is, your camera focuses on the image created on the glass of the dome port itself, rather than on the real subject, which is farther away. This correction also allows you to take over/

under shots—part of the frame above water and the rest below—without disastrously skewed optics on the above-water portion.

### DISTINGUISH YOURSELF

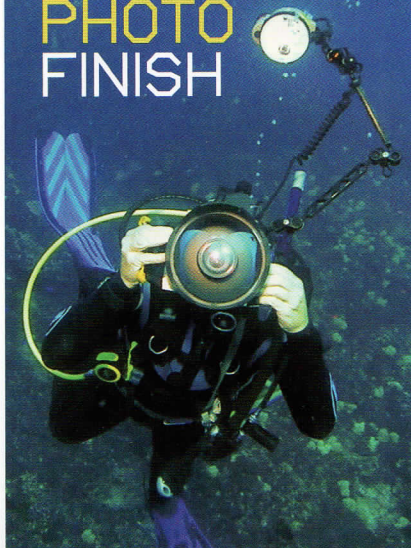
The field of underwater photography is very competitive. As with any art form, you have to exercise your vision. You have to pick your subject matter and decide what distinguishes you from other photographers. "Photography is about how you look and how you dream and how you see and what your interests are," says Doubilet. "And when you figure that out, then you'll find things that are... intriguing and wonderful, and maybe things that have a lot more meaning than [the photographs of] other photographers who are racing around making superficial images."

And don't forget, once you're back topside, you have to hit the ground running and market your work. Now get down there in the wonderful, exotic world of Jacques Cousteau. A great white shark is waiting for his close-up. ■

*Newlywed Eric Butterfield is a San Francisco-based freelance writer specializing in digital photography and computer technology.*

## SECRETS OF THE PROS

# PHOTO FINISH



What gear do the top underwater photographers in the world use? For a **WIDE-ANGLE LENS**, David Doubilet swears by his fisheye and super-wide zooms; Levin singled out his 20mm lens, but noted that if a whale or other large animal is close, he may prefer a 15mm lens.

Stephen Frink uses his **SEACAM HOUSING** because its interchangeable magnified viewfinders (such as the S45 and S180) help him see what he is doing. "The bottom line is, if you can't see the focus to compose, and you can't read the LED's, it's a lousy housing," says Frink, who stands behind Seacam's products so much, he's also a distributor for the Austrian camera-housing manufacturer.

The pros also say **EXTERNAL FLASH** is better than on-camera flash at preventing "backscatter"—an unattractive speckling of light reflecting from water-borne particles. Backscatter is emphasized if your flash is close to your lens, rather than off to the side. Look for a flash with a wide beam, since you'll be using mostly wide-angle or macro lenses.

When shopping for a flash, consider how you want it to interact with your camera. Some systems have a wireless sensor (slave) that triggers the flash when your camera's built-in flash goes off, or may offer the option of using a sync cord in order to link to your camera's TTL (through the lens) exposure metering. Just make sure that your underwater housing has a connection to accommodate an external flash.

Also worth considering are the **FLASH ARMS**—you'll want the flexibility to easily adjust for lighting macro subjects or wide-angle shots, such as seen on Ikelite's Substrobe series (packages start at \$500).